Quantum Cellular Automata (QCA) is an emerging nanotechnology and one of the top six technologies of the future. CMOS technology has a lot of limitations while scaling into a nano-level. QCA technology is a perfect replacement of CMOS technology with no such limitations. In this paper we have proposed one 2:1 multiplexer circuit having lowest complexity and area compared to the existing QCA based approaches. The proposed design is verified using QCADesigner.

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